(3) *Pyrogens.* Proceed as directed in § 436.32(b) of this chapter, using a solution containing 50 milligrams of cephalothin per milliliter.

(4) [Reserved]

(5) *Loss on drying.* Proceed as directed in § 436.200(b) of this chapter.

(6) *pH.* Proceed as directed in § 436.202 of this chapter, using an aqueous solution containing 250 milligrams per milliliter; however, if it is packaged for dispensing, use the solution obtained after reconstituting the drug as directed in the labeling.

(7) *Specific rotation.* Dilute an accurately weighed sample with sufficient distilled water to give a concentration of approximately 50 milligrams per milliliter. Proceed as directed in § 436.210 of this chapter, using a 1.0-decimeter polarimeter tube and calculate the specific rotation on an anhydrous basis.

(8) *Crystallinity.* Proceed as directed in § 436.203(a) of this chapter.

(9) *Identity.* Using a 0.0025-percent solution of the sample in water and a suitable spectrophotometer, record the ultraviolet absorption spectrum from 220 to 310 nanometers. The spectrum compares qualitatively to that of the cephalothin working standard similarly tested.

[39 FR 19040, May 30, 1974, as amended at 46 FR 46312, Sept. 18, 1981; 48 FR 11427, Mar. 18, 1983; 50 FR 19919, May 13, 1985]

§ 442.27 Cephalexin monohydrate.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Cephalexin monohydrate is the monohydrate form of 7-(D-*alpha*-amino-*alpha*-phenylacetamido)-3-methyl-3-cephem-4-carboxylic acid. It is so purified and dried that:

(i) Its potency is not less than 900 micrograms of cephalexin per milligram on an anhydrous basis.

(ii) [Reserved]

(iii) Its moisture content is not less than 4.0 nor more than 8.0 percent.

(iv) Its pH in an aqueous solution containing 50 milligrams per milliliter is not less than 3.0 nor more than 5.5.

(v) When calculated on an anhydrous basis, its absorptivity at 262 nanometers is not less than 95 percent and not more than 104 percent of that of the cephalexin standard similarly treated and corrected for potency.

(vi) It gives a positive identity test.

(vii) It is crystalline.

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 432.5 of this chapter.

(3) *Requests for certification; samples.* In addition to complying with the requirements of § 431.1 of this chapter, each such request shall contain:

(i) Results of tests and assays on the batch for potency, moisture, pH, absorptivity, identity, and crystallinity.

(ii) Samples required: 10 packages, each containing approximately 300 milligrams.

(b) *Tests and methods of assay*—(1) *Potency.* Use either of the following methods; however, the results obtained from the microbiological agar diffusion assay shall be conclusive.

(i) *Microbiological agar diffusion assay.* Proceed as directed in § 436.105 of this chapter, preparing the sample for assay as follows: Dissolve an accurately weighed sample in sufficient 1 percent potassium phosphate buffer, pH 6.0 (solution 1), to give a stock solution containing 1.0 milligram per milliliter (estimated). Further dilute an aliquot of the stock solution with solution 1 to the reference concentration of 20 micrograms of cephaxelin per milliliter (estimated).

(ii) *Iodometric assay.* Proceed as directed in § 436.204 of this chapter.

NOTE: The 10 milliliters of 0.01*N* iodine must be added within 20 seconds after the addition of the 2.0 milliliters of 1.2*N* hydrochloric acid, and the assay should be completed within 1 hour after the sample and standard are first put into solution.

(2) [Reserved]

(3) *Moisture.* Proceed as directed in § 436.201 of this chapter.

(4) *pH.* Proceed as directed in § 436.202 of this chapter, using an aqueous suspension containing 50 milligrams per milliliter.

(5) *Absorptivity.* Determine the absorbance of the sample and standard solutions in the following manner: Dissolve accurately weighed portions of approximately 50 milligrams each of the sample and standard in 250 milliliters of distilled water. Transfer a 10-milliliter aliquot to a 100-milliliter volumetric flask and dilute to volume

with distilled water. Using a suitable spectrophotometer and distilled water as the blank, determine the absorbance of each solution at 262 nanometers. Determine the percent absorptivity of the sample relative to the absorptivity of the standard using the following calculations:

$$\text{Percent relative absorptivity} = \frac{\text{Absorbance of sample}}{\text{Absorbance of standard}} \times \frac{\text{Milligrams of standard}}{\text{Milligrams of sample}} \times \text{Potency of standard in micrograms per milligram} \times \frac{10}{100 - m}$$

where m=percent moisture in the sample.

(6) *Identity.* Proceed as directed in § 436.211 of this chapter, using the 0.5 percent potassium bromide disc prepared as described in paragraph (b)(1) of that section.

(7) *Crystallinity.* Proceed as directed in § 436.203 of this chapter.

[39 FR 19040, May 30, 1974, as amended at 50 FR 19919, May 13, 1985; 52 FR 35912, Sept. 24, 1987]

§ 442.28 Cephalexin hydrochloride monohydrate.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Cephalexin hydrochloride monohydrate is the hydrochloride salt of 7-*(D-alpha-* amino-*alpha-*phenylacetamido)-3-methyl-3-cephem-4-carboxylic acid monohydrate. It is so purified and dried that:

(i) Its potency is not less than 800 micrograms and not more than 880 micrograms of cephalexin per milligram on an ''as is'' basis.

(ii) Its moisture content is not less than 3.0 nor more than 6.5 percent.

(iii) The pH of an aqueous solution containing 10 milligrams per milliliter is not less than 1.5 nor more than 3.0.

(iv) It gives a positive identity test.

(v) It is crystalline.

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 432.5 of this chapter.

(3) *Requests for certification; samples.* In addition to complying with the requirements of § 431.1 of this chapter, each such request shall contain:

(i) Results of tests and assays on the batch for cephalexin potency, moisture, pH, identity, and crystallinity.

(ii) Samples, if required by the Director, Center for Drug Evaluation and Research: 10 packages, each containing approximately 500 milligrams.

(b) *Tests and methods of assay*—(1) *Cephalexin potency.* Proceed as directed in § 442.40(b)(1)(ii), except that ''cephalexin'' is substituted at each occurrence of ''cephradine''.

(2) *Moisture.* Proceed as directed in § 436.201 of this chapter.

(3) *pH.* Proceed as directed in § 436.202 of this chapter, using an aqueous solution containing 10 milligrams per milliliter.

(4) *Identity.* Proceed as directed in § 436.367 of this chapter.

(5) *Crystallinity.* Proceed as directed in § 436.203(a) of this chapter.

[54 FR 48860, Nov. 28, 1989]

§ 442.29a Sterile cephapirin sodium.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Sterile cephapirin sodium is the sodium salt of 7-[α(4-pyridylthio) -acetamido]-cephalosporanic acid. It is a white to off-white powder. It is so purified and dried that:

(i) Its potency is not less than 855 micrograms and not more than 1,000 micrograms of cephapirin per milligram on an ''as is'' basis. If it is packaged for dispensing, its content is satisfactory if it contains not less than 90 percent and not more than 115 percent of the number of milligrams of cephapirin that it is represented to contain.

(ii) It is sterile.

(iii) It is nonpyrogenic.

(iv) [Reserved]

(v) Its moisture content is not more than 2.0 percent.

(vi) Its pH in an aqueous solution containing 10 milligrams of cephapirin